# Mediastinal Tuberculosis mass in a three-month-old boy

Khadija Boussetta*, Faten Tinsa*, Hadhamai Ghaffari*, Ines Brini*, Nadia Aloui**, Francis Jaubert***, Souad Bousnina*

** : Department of Pediatrics B of the children's hospital of Tunis, Boulevrad 9 avril, Bab Saadoun, 1007 Jabbary, Tunis, Tunisia*
*** : Department of pediatric radiology, children's hospital of tunis, , Boulevrad 9 avril, Bab Saadoun, 1007 Jabbary, Tunis, Tunisia*
**** : Department of Histopathology of the hospital Necker Enfants-Malades , 149 rue de Sèvres, 75743 Paris Cedex 15, France*

*K. Boussetta, F. Tinsa, H. Ghaffari, I. Brini, N. Aloui, F. Jaubert, S. Bousnina*

Masse médiastinale d'origine tuberculeuse chez un garçon de 3 mois

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## RÉSUMÉ

**Prérequis :** Les masses médiastinales d'origine tuberculeuse sont extrêmement rares chez le nourrisson.
**But :** Rapporter une observation extrêmement rare de masse médiastinale tuberculeuse.
**Observation :** Nous rapportons l'observation d'un nourrisson qui s'est présenté dans un tableau de wheezing et de pneumopathie persistante évoluant depuis un mois. Les investigations radiologiques ont montré une grande masse médiastinale postérieure infiltrant les poumons. La biopsie de la masse sous thoracoscopie a conclue à un granulome avec une nécrose caséeuse évoquant une tuberculose. L'évolution a été favorable sous traitement antituberculeux
**Conclusion :** L'origine tuberculeuse d'une masse médiastinales est à évoquer devant une masse médiastinale chez l'enfant.

## Mots-clés

Tuberculose ; masse médiastinale, wheezing, nourrisson

## SUMMARY

**Background:** Mediastinal mass of tuberculous origin is exceedingly rare in infant.
**Aim:** to report an exceedingly rare case of mediastinal mass of tuberculous origin.
**Case report:** We report a three-month-old boy who presented a one month history of wheezing and persistent pneumopathy. Radiological investigations showed a large posterior mediastinal mass which infiltrates lungs. Thoracoscopic biopsy showed caseous necrosis with granuloma suggestive of tuberculosis. The outcome was favourable with antituberculous chemotherapy.
**Conclusion:** Mediatinal mass of tuberculous origin should considered in differential diagnosis of mediastinal masses in children; be suggested in mediastinal mass in children

## Key-words

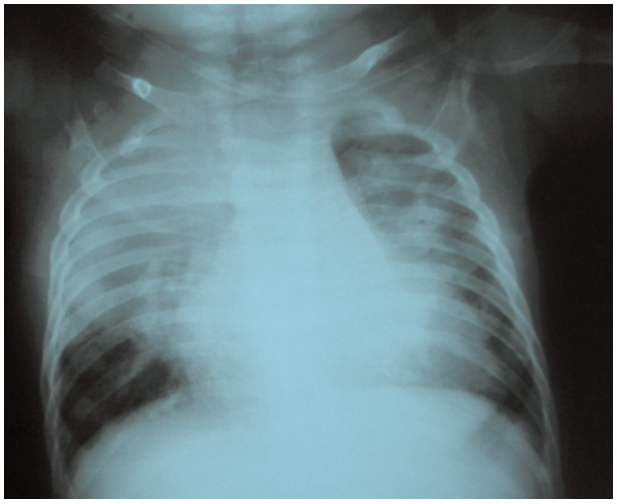
Tuberculosis; mediastinal mass; wheezing; infant

Mediastinal masses in pediatric age patients have a wide range of differential diagnoses, including benign and malign tumors and chronic infectious process [1, 2, 3]. Because the clinical and radiological finding may be very similar among these entities, most lesions require biopsy for a definite diagnosis.
We report a 3-month-old boy who presented mediastinal tuberculosis.

## CASE REPORT

A 3-month-old boy presented with a month history of a cough, wheezing, dyspnoea, fever and persistent pneumonia. At physical examination, his weight was 5600 g and height was 62 cm (-1SD), temperature was 37.7°C, heart rate was 100 beats/min, respiratory rate was 60 cycles/min. He had wheezing and respiratory distress. He doesn't had hepatomegalia or splenomegalia. A chest radiographic showed bilateral alveolar infiltrates with upper condensation (figure 1).

**Figure 1 :** Chest-X- Ray showing bilateral lung infiltrates with upper right lung condensation



Laboratory analysis showed hypochromic microcytic anemia with haemoglobin level of 8.1 g/dL, hematocrit of 22.3%, MCV of 78.89, MCH of 25pg, white blood cell count of 24800/mm3 (15900 neutrophils, 8500 lymphocytes), platelet count of 664000/mm3, C-reactive protein of 18mg/l. Sputum culture, serology of mycoplasma pneumoniae, chlamydiae pneumoniae and trachomatis were negatives. A computed tomography (CT) and RMN of the chest showed posterior mediastinal mass that infiltrate the upper segment of lungs (figure 2, 3). Values of · fetoprotein and , human chorionic gonadotropin were normal. Human immunodeficiency virus (HIV) antibodies were negative and the immunity analysis didn't show a primary immunodeficiency. A bone marrow aspiration was normal. Bronchoscopy showed external compression of all bronchi, no granuloma was found. The culture of bronchoalveolar lavage for mycobacterium tuberculosis was negative. The thoracoscopic biopsy of the mass showed caseous necrosis with granuloma suggestive of tuberculosis. Tuberculin skin test was negative. Culture of mycobacterium tuberculosis from gastric aspirates, sputum, cerebrospinal fluid and urine were negative. Culture of non tuberculosis mycobacteria from gastric aspirates and sputum was also negative. We doesn't identified source of infection. Physical examination, Chest X Ray, culture of mycobacterium tuberculosis, and tuberculosis skin tests of the different member of the family were negative.

**Figure 2 :** Chest Resonance magnetic imaging showing posterior mediastinal mass with lungs infiltrates

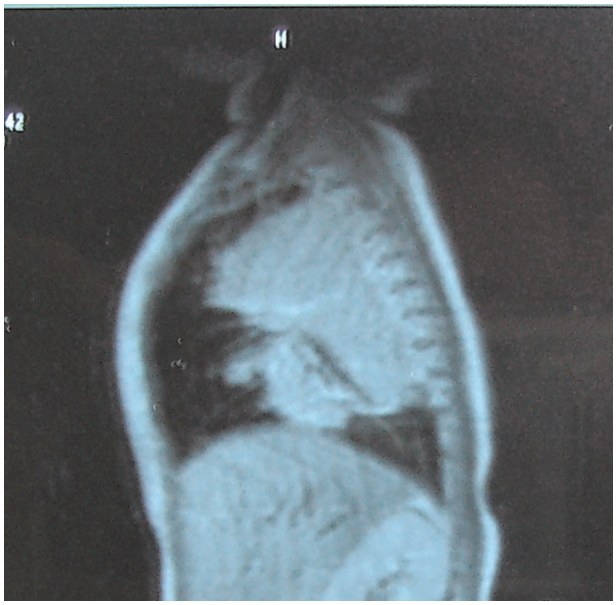
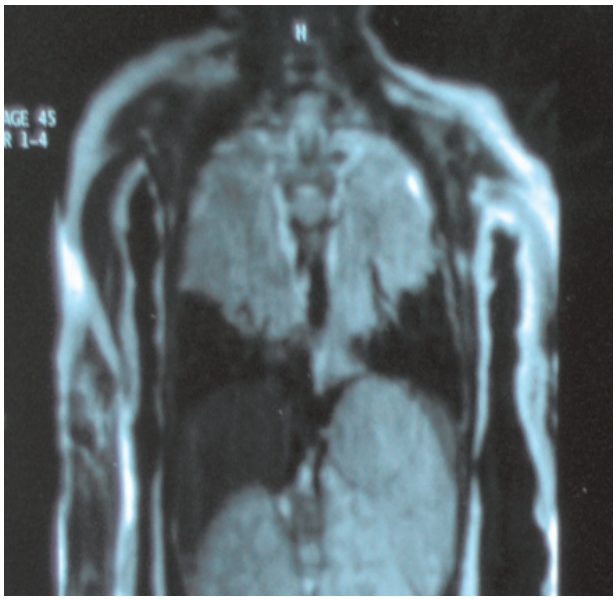


**Figure 3 :** Chest resonance magnetic imaging showing mediastinal mass with bilateral lung infiltrates



Gynaecological examination and abdominal ultrasound of the mother were normal; these finding suggested a perinatal contamination. The infant was treated with antituberculous chemotherapy associated rifampicin izoniazid ethambutol and pyrazinamide for 2 months and rifampin , izoniazid for 10 months in association with corticosteroids for two months. The outcome was favourable at two years of treatment. Chest CT showed disappearance of mediastinal mass and the presence of apical lung collapsus with apical bronchiectasis.

## DISCUSSION

Tuberculosis remains an important cause of morbidity and mortality worldwide especially in developing countries. Children represent one of the high risk groups for this disease.
Frequent radiological findings of pulmonary tuberculosis of infants are mediastinal or hilar lymphadenopathy, with central necrosis and air space consolidation especially mass like consolidations with low attenuation areas or cavities within consolidations. Disseminated pulmonary nodules and air way complications are also frequently detected in this age group [4,5].
Mediastinal mass of tuberculous origin is exceedingly rare in infant, the differential diagnosis include especially tumors [3]. Only four cases of tuberculosis mediastinal mass were reported, three of them were isolated mediastinal masses. Thirithuvathas et al [6] reported 2 years-old girl presenting with recurrent episodes of respiratory infections related to anterior mediastinal mass of tuberculous origin. De Ugarde reported a three months old boy who presented stridor and obstructive emphysema [7]. The investigations found a mediastinal mass compressing the carina and left mainstem bronchus of tuberculous origin.
Ahmed et al [8] reported a case of mediastinal tuberculosis in 10 months old girl who presented five months history of cough and wheezing. Gillis et al [9] reported a superior mediastinal mass extending inferiorly into the right hemithorax of tuberculosis origin in a 7-month-old infant miming neuroblastoma. This case is closest to our case. In our patient, mediastinal mass was not isolated, it appears like a malignant tumor compressing the air way track and infiltrating the upper segments of the lungs.
The diagnostic of tuberculosis is difficult especially in very young infant because of atypically presentations and the lack of bacteriology confirmation [10]. The tuberculin skin test is frequently negative. In the study of Hageman et al only 2 of the 14 infants with congenital tuberculosis who were tested had positive skin tests [10]. History of direct contact with patients who have contagious tuberculosis play essential role in diagnosing tuberculosis in infant.
In our case the diagnosis was difficult, there was no history of tuberculosis in the family, tuberculin skin test was negative and we did not have bacterial confirmation of the mycobacterium tuberculosis. The diagnosis was made on histological findings which suggested more tuberculosis than non tuberculosis mycobacterium. Clinical and histological findings in non tuberculosis mycobacterium infection is closest to tuberculosis and it is often difficult to differentiate between these diseases [ 3 ]. In our case non tuberculous mycobacterium culture in gastric fluid and sputum was negative and the favourable outcome with antituberculous therapy confirms the diagnosis.

## Références


1. Grosfeld JL, Skinner MA, Rescorla FJ, West KW, Scherer LR. Mediastinal tumors in children: experience with 196 cases. Ann Surg Oncol 1994; 1:121–127
2. Alborzi A, Pasyar N, Wald ER. Actinomycosis as a neglected diagnosis of mediastinal mass. Jpn J Infect Dis 2006; 59: 52-53
3. Nolt DN, Michael MG, Wald ER. Intrathoracic disease from non tuberculosis mycobacteria in children: two cases and a review of the literature. Pediatrics 2003;112: E434-E439
4. Kim WS, Choi JI, Cheon JE, Kim IO, Yeon KM, Lee HJ. Pulmonary tuberculosis in infants: Radiographic and CT finding. Am J Roentgenol 2006; 187: 124-133
5. Im JC, Song KS, Kang HS, et al. Mediastinal tuberculous lymphadenits : CT manifestations. Radiology 1987;164: 115-119
6. Thirithuvathas AJ, Ravikumar S, Gnanaseelan T. Huge prepericardial tuberculous abscess in a 2-year-old child. J Pediatr Surg 1989 ; 24:1124
7. De Ugarde DA, Shapiro NL, Williams HL.Tuberculosis mediastinal mass presenting with stridor in a 3 months-old child. J Pediatr surg 2003; 38: 624-625
8. Ahmed A, Mirza S, Rothera MP. Mediastinal tuberculosis in a 10-month-old child. J Laryngol Otol 2001;115:161-3.
9. Gillies MJ , Farrugia MK, Lakhoo K.An unusual cause of a superior mediastinal mass in an infant [abstract]. Ped Surg Int. Published Online First: 30 October 2007. Doi:10.1007/s00383-007-2050-3
10. Hageman J, Shulman S, Schreiber M, Luck S, Yogev R. Congenital tuberculosis: critical reappraisal of clinical findings and diagnostic procedures. Pediatrics 1980; 66:980–84.